AASA Aviation Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- **Practice answering questions under realistic conditions,**
- **Improve accuracy and speed,**
- **Review explanations to strengthen weak areas, and**
- **Approach the exam with greater confidence.**

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here’s how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don’t just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There’s no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

1. Accelerometers in autopilot assist in achieving what in flight control?

A. Maintaining altitude

B. Setting rate of climb and descent

C. Controlling yaw

D. Regulating engine thrust

2. In autobrake retardation rates, which statement is true?

A. RTO is greater than MAX

B. MAX is greater than RTO

C. RTO equals OFF

D. Disarm has the highest retardation

3. On a climb, thrust required is equal to:

A. Total Drag + Weight Component

B. Lift + Drag

C. Weight alone

D. Drag alone

4. On take-off from a short runway at maximum take-off weight, what should be the bleed valve position?

A. ON

B. OFF

C. Partially Open

D. Closed

5. Which valve is responsible for maintaining cabin pressurization by regulating outflow?

A. Outflow valve

B. Ram air valve

C. Safety valve

D. Vent valve

6. During autopilot ALT HOLD, loss of the bus bar requires altitude information to come from which source?

A. Autopilot aneroid

B. Static port

C. Altimeter

D. Inertial navigation system

7. A benefit of a split bus type aircraft electrical system is

A. There is reduced need for frequency matching/less demand

B. Better fault isolation

C. Lower weight

D. Higher maintenance cost

8. CL of a swept wing compared to a straight wing with comparable area and aspect ratio is

A. Less in both supersonic and subsonic

B. Greater in subsonic only

C. Less in subsonic only

D. Greater in both supersonic and subsonic

9. Calculate the Specific Air Range for TAS 150 kts and fuel burn 1500 kg/hr.

A. 100 nm/tonne

B. 75 nm/tonne

C. 50 nm/tonne

D. 125 nm/tonne

10. If maximum cabin differential pressure is reached and the aircraft climbs, what happens to cabin differential and cabin altitude?

A. Cabin differential remains the same; cabin altitude increases

B. Cabin differential increases; cabin altitude increases

C. Cabin differential decreases; cabin altitude decreases

D. Cabin differential remains; cabin altitude remains

Answers

1. B
2. A
3. A
4. B
5. A
6. A
7. A
8. A
9. A
10. A

Explanations

1. Accelerometers in autopilot assist in achieving what in flight control?

A. Maintaining altitude

B. Setting rate of climb and descent

C. Controlling yaw

D. Regulating engine thrust

Accelerometers measure linear acceleration along the aircraft's axes, including the vertical axis. In an autopilot, this vertical acceleration data helps the system understand how quickly the aircraft's vertical speed is changing. When you set a target climb or descent rate, the autopilot uses that acceleration information to adjust pitch so the vertical speed moves toward and stays at the desired rate, providing a smoother, controlled climb or descent. This is distinct from simply holding altitude or controlling yaw or engine thrust, which rely on other sensors and controls.

2. In autobrake retardation rates, which statement is true?

A. RTO is greater than MAX

B. MAX is greater than RTO

C. RTO equals OFF

D. Disarm has the highest retardation

Autobrake retardation rates are arranged so that the abort-at-takeoff setting provides the strongest deceleration. This ensures a rapid and controlled stop if a decision to abort is made after V1. The MAX setting is also strong, but it's intended for normal autobrake use rather than the most aggressive stop required during an aborted takeoff. OFF simply disables autobrake, and Disarm deactivates the autobrake system without offering a higher braking rate. Therefore, the rate used for an aborted takeoff is greater than the MAX rate.

3. On a climb, thrust required is equal to:

A. Total Drag + Weight Component

B. Lift + Drag

C. Weight alone

D. Drag alone

In a climb, you must balance everything along the flight path. Drag acts opposite the direction you're moving, and gravity adds a component that resists climbing, equal to W sin(γ) where W is weight and γ is the climb angle. To maintain a steady climb, the thrust has to overcome both of these, so the thrust required is D + W sin(γ). This is larger than in level flight (where γ is 0, so T = D). Lift isn't directly part of the balance against forward flight, since it acts mainly perpendicular to the flight path, so it doesn't set the thrust needed to climb.

4. On take-off from a short runway at maximum take-off weight, what should be the bleed valve position?

A. ON

B. OFF

C. Partially Open

D. Closed

Bleed air taken from the engine adds a load on the compressor and creates extra drag, which reduces overall thrust available for takeoff. When you're at maximum takeoff weight on a short runway, every bit of thrust matters, and you want to minimize any unnecessary engine load. If you don't need bleed air for cabin conditioning or anti-ice during this maneuver, keeping the bleed valve closed avoids that additional burden and gives you the best takeoff performance and acceleration. Opening or partially opening would simply cost thrust and fuel without providing benefit in this scenario, unless bleed air is required for the environmental or anti-ice systems.

5. Which valve is responsible for maintaining cabin pressurization by regulating outflow?

A. Outflow valve

B. Ram air valve

C. Safety valve

D. Vent valve

Cabin pressurization is controlled by regulating how much air leaves the cabin. The outflow valve is the primary device that modulates this exhaust path. It's controlled by the pressurization system to hold the selected cabin pressure, adjusting its opening to maintain the desired differential between inside and outside air. When the airplane climbs, the differential tends to increase, so the valve opens more to let more air escape and keep the cabin pressure at the set value. If the valve narrows, less air leaves and the cabin pressure rises toward the target. The ram air valve, by contrast, provides outside air for ventilation or cooling when needed, such as for pack operation or certain abnormal conditions; it does not regulate the cabin pressure under normal operation. The safety valve is a relief device that opens only if the differential pressure would become unsafe, preventing structural damage—not for normal regulation. Vent valves may handle other ventilation duties, but they do not manage the primary cabin pressure in the same way as the outflow valve.

6. During autopilot ALT HOLD, loss of the bus bar requires altitude information to come from which source?

A. Autopilot aneroid

B. Static port

C. Altimeter

D. Inertial navigation system

When the autopilot is in ALT HOLD, it needs a stable altitude reference. If the electrical bus feeding the normal altitude sensing path fails, the system relies on an independent source built into the autopilot—the autopilot aneroid. This internal pressure-sensing capsule provides altitude information to the autopilot so it can continue to hold the commanded altitude even with the main bus down. The static port and the exposed altimeter depend on the standard air data system, which isn't available to the autopilot in this fault scenario, and inertial navigation systems don't provide a direct, reliable altitude input for hold mode.

7. A benefit of a split bus type aircraft electrical system is

A. There is reduced need for frequency matching/less demand

B. Better fault isolation

C. Lower weight

D. Higher maintenance cost

Split bus electrical systems have two independent bus bars, each fed by its own source or circuit. Because the buses aren't normally connected, the two sources don't have to share power or stay in tight frequency synchronization. That means you can run each bus independently without worrying about matching generator frequencies or perfectly balancing loads across a single common bus. The result is simpler operation and reduced inter-source demand, especially when one source is offline or when switching between sources. While other aspects like fault isolation can be relevant in certain setups, the clearest and most direct benefit described here is avoiding the need for frequency matching between sources by keeping the buses separate.

8. CL of a swept wing compared to a straight wing with comparable area and aspect ratio is

A. Less in both supersonic and subsonic

B. Greater in subsonic only

C. Less in subsonic only

D. Greater in both supersonic and subsonic

The ability of a wing to generate lift per unit of angle of attack (lift coefficient) is reduced when the wing is swept, even if the area and aspect ratio are kept the same. Sweeping the wing changes how the flow meets the wing: the flow's normal component to the wing's surface is smaller, so the wing's circulation and the pressure differences that produce lift are weaker. In subsonic flight this shows up as a lower lift-curve slope and a smaller CL for a given flight condition. In supersonic flight, sweep still reduces the effective lift generation per unit angle of attack, even though it helps with drag and wave effects, so the overall lift coefficient remains lower than that of a straight wing with identical area and AR. To compensate, a higher angle of attack (and thus more drag) would be needed to achieve the same lift as the straight wing.

9. Calculate the Specific Air Range for TAS 150 kts and fuel burn 1500 kg/hr.

A. 100 nm/tonne

B. 75 nm/tonne

C. 50 nm/tonne

D. 125 nm/tonne

Specific Air Range tells you how far you can fly for each tonne of fuel burned at a given true airspeed. It's calculated as SAR = TAS / (fuel flow in tonnes per hour). Here, TAS is 150 knots and fuel burn is 1500 kg/hour, which is 1.5 tonnes/hour. So SAR = 150 / 1.5 = 100 nautical miles per tonne. This means you can travel about 100 NM for each tonne of fuel consumed under these conditions.

10. If maximum cabin differential pressure is reached and the aircraft climbs, what happens to cabin differential and cabin altitude?

A. Cabin differential remains the same; cabin altitude increases

B. Cabin differential increases; cabin altitude increases

C. Cabin differential decreases; cabin altitude decreases

D. Cabin differential remains; cabin altitude remains

When the cabin is pressurized, the system maintains a fixed pressure difference between inside and outside, called the cabin differential. It can only go up to a maximum value. If you climb further after hitting that limit, the outside pressure falls, but the system cannot increase the differential beyond its maximum. To keep within the limit, the cabin pressure is reduced along with the outside pressure, so the difference stays at the maximum. Since cabin pressure decreases as you climb, the cabin's equivalent altitude (cabin altitude) rises. So the cabin differential stays the same (at its maximum) while the cabin altitude increases.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://aasaaviation.examzify.com

We wish you the very best on your exam journey. You've got this!